

Technical Advisor Comments

- 2 reviewers recommended fund, 1 recommended funding may be considered.
- The 64% match comes from Evolve Analytics: \$660,828 (Cash) and \$242,600 (In-Kind)
- 2 reviewers had concerns about the achievability of the project.
 - 1 felt that more information was needed regarding the tasks in correlation with the time and budget.
 - Another had concerns about the timeline for the hardware development, especially while tackling a software development process in parallel.
- All 3 reviewers were comfortable with the methodology.
- Regarding the background of the investigators, reviewers commented on recent successes and strong partners. 1 reviewer indicated that the PI seems less experienced at specific technical aspects.
- Regarding the awareness of current research activity:
 - 1 indicated that there was not a discussion of competing research and commercial innovations.
 - 1 indicated that a thorough literature review should be done before commencing the project.
- Regarding the project management plan:
 - 1 reviewer felt that it was very inadequate.
 - 1 reviewer felt more specific details for each segment of the software stack would have been beneficial.
- All 3 reviewers were comfortable with the facilities and equipment.
- 1 reviewer had concerns about the budget, indicating that it was difficult to validate.
- Overall:
 - 1 reviewer felt that the project is a good idea, but the project plan and budget were difficult to understand. It was noted that UAVs shouldn't be a solution looking for a problem. The example mentioned was that it may cost \$300K/year to inspect for dead birds on a wind farm, but no similar analyzed cost for doing it with a drone was provided. The reviewer felt the project management plan didn't follow industry standards and was the largest risk.
 - 1 reviewer felt that this was an improved proposal with additional economic benefits more clearly spelled out and more detail on the team. While some of the suggested economic benefits seem aggressive, at least the case is made. The reviewer emphasized concerns that a software-centric team is taking on a hardware development project simultaneously, noting that there wasn't strong hardware development experience shown in the bios. The reviewer felt that it seemed like a good use case for North Dakota; it could make the ND wind industry more competitive and leverage strong local capabilities.
 - 1 reviewer felt that the project has the potential to reduce cost and potential hazards while at the same time increasing accuracy with the help of data science and drone sensors.

Technical Advisor Recommendations

Funding may be considered. This project fits nicely with North Dakota's strategic goals in advancing the UAS industry in the State. The project itself has significant potential impacts on the wind industry. However, an estimated cost comparison would have been beneficial.

The concerns regarding a software-centric team taking on a hardware development project is also something to be considered. Additional information from the applicant addressing this concern would be beneficial.

Two reviewers mentioned concerns with the awareness of current research. More information on market competition would be beneficial.

Suggested Contingencies If Funded

- More specific deliverables are provided to measure project success, including:
 - A cost comparison of traditional methods for monitoring at a wind farm vs. the new product.
 - Benefits for North Dakota, such as estimated income potential and jobs created.